WHAT IS CLAIMED IS:

1. A selectively protected electrical system for providing power from a power source to energize a load, comprising:

a power driver circuit for controllably transferring power from the power source to the load, the power driver circuit being encapsulated; and

a controller for enabling and disabling the power driver circuit, the controller being un-encapsulated, such that contaminants in the protected electrical system are more likely to induce an electrical fault and disable the un-encapsulated controller and are substantially inhibited from inducing an electrical fault in the encapsulated power driver circuit.

2. The system recited in claim 1, wherein the power driver circuit is encapsulated by a potting material.

3. The system recited in claim 1, further comprising at least one un-encapsulated circuit element dissolvable by the contaminant such that the system is disabled.

4. The system recited in claim 3, wherein the at least one circuit element interrupts power when dissolved such that the system is disabled.

5. The system recited in claim 3, wherein the at least one circuit element is located in at least one of the power driver circuit and the controller.

6. The system recited in claim 1, further comprising at least one un-encapsulated circuit element for sensing a contaminant and passing a signal to the controller when the contaminant is sensed such that the controller disables the system.

7. The system recited in claim 6, wherein the at least one circuit element comprises a humidity sensor.

8. The system recited in claim 7, wherein the humidity sensor, upon sensing the contaminant, passes a signal to the controller which causes the controller to disable the system.

9. The system recited in claim 6, wherein the at least one circuit element comprises a pair of electrically isolated conductive plates separated by a distance adapted for receiving a contaminant between the conductive plates such that the contaminant shorts the conductive plates to one another.

10. The system recited in claim 8, wherein the signal further causes the controller to initiate a user-perceptible alarm.

11. The system recited in claim 10, wherein the user-perceptible alarm comprises at least one of an audio signal, a displayed message, and a vibration.

12. The system recited in claim 1, wherein the disabled controller cannot be further operated until the controller is reset.

13. The system recited in claim 1, wherein the power driver circuit comprises an H-bridge configuration of switching elements.

14. The system recited in claim 1, wherein the controller comprises control electronics.

15. The system recited in claim 1, wherein the controller comprises at least one microprocessor.

16. The system recited in claim 1, wherein the contaminant is conductive.

17. The system recited in claim 1, wherein the contaminant is moisture.

18. The system recited in claim 1, wherein the electrical fault comprises a short circuit condition.

19. The system recited in claim 2, wherein the potting material is a moisture-resistant potting material.

20. The system recited in claim 19, wherein the moisture-resistant potting material is selected from the group consisting essentially of parylene, room temperature vulcanizing silicone elastomers (RTV's), silicone, epoxies, adhesives, and plastics.

21. A selectively protected electrical system, comprising:

a power source;

a load;

a power driver circuit for controllably transferring power from the power source to the load, the power driver circuit being encapsulated; and

a controller for enabling and disabling the power driver circuit, the controller being un-encapsulated, such that a contaminant that may be in the system is more likely to induce an electrical fault and disable the un-encapsulated controller and is inhibited from inducing the electrical fault in the encapsulated power driver circuit.

22. The system recited in claim 21, wherein the load is a DC motor.

23. The system recited in claim 22, wherein the DC motor is used to drive a pump to deliver a fluid.

24. The system recited in claim 23, wherein the pump is an infusion pump, and wherein disabling the controller reduces the possibility of accidental delivery of excess fluid.

25. A power delivery system for safely providing power from a power source to energize a load, the system comprising:

a control portion comprising a controller for controlling a power driver circuit;

a power driver portion comprising the power driver circuit responsive to the controller for controllably transferring power from the power source to the load; and

a potting material selectively covering the power driver portion such that the power driver circuit is encapsulated by the potting material and such that the control portion remains un-encapsulated by the potting material, and such that contaminants that may be in the system are more likely to induce an electrical fault and disable the un-encapsulated control portion and are inhibited from inducing the electrical fault in the encapsulated power driver circuit.

26. The system recited in claim 25, wherein the power driver circuit comprises an H-bridge configuration of switching elements.

27. The system recited in claim 25, wherein the controller comprises control electronics.

28. The system recited in claim 25, wherein the controller comprises at least one microprocessor.

29. The system recited in claim 25, further comprising a safety circuit coupled to the controller and the power driver portion and controlled by the controller to inhibit transferring

power from the power source to the load when the safety circuit is in a disable state and to permit transferring power from the power source to the load when the safety circuit is in an enable state.

30. The system recited in claim 29 wherein the safety circuit is co-located with the controller.

31. The system recited in claim 29, wherein the safety circuit is integral with the load.

32. The system recited in claim 31, wherein the safety circuit is encapsulated by the potting material.

33. The system recited in claim 25, wherein the electrical fault comprises a short circuit condition.

34. The system recited in claim 25, wherein the potting material is a moisture-resistant potting material.

35. The system recited in claim 34, wherein the moisture-resistant potting material is selected from the group consisting essentially of parylene, room temperature vulcanizing silicone elastomers (RTV's), silicone, epoxies, adhesives, and plastics.

36. In an electrical system subject to contaminant exposure, a method for reducing the likelihood of a contamination induced electrical fault in a selected portion of the electrical system, the method comprising:

providing a critical portion of the electrical system for performing a critical operation;

providing a non-critical portion of the electrical system for enabling the critical portion to perform the critical operation; and

encapsulating the critical portion to provide a barrier between the critical portion and a

contaminant such that the non-critical portion is un-encapsulated and such that a contaminant that may be in the system is more likely to induce an electrical fault in the un-encapsulated non-critical portion such that the non-critical portion disables the critical portion and such that the contaminant is inhibited from inducing the electrical fault in the encapsulated critical portion.

37. The method recited in claim 36, wherein encapsulating the critical portion comprises potting the critical portion with a moisture-resistant potting material.

38. The method recited in claim 37, wherein the moisture-resistant potting material is selected from the group consisting essentially of parylene, room temperature vulcanizing silicone elastomers (RTV's), silicone, epoxies, adhesives, and plastics.

39. In an electrical system subject to contaminant exposure, a method for reducing the likelihood of a contamination induced electrical fault in a selected portion of the electrical system, the method comprising:

providing a critical portion of the electrical system for performing a critical operation;

providing at least one circuit element operative to disable the electrical system when exposed to a contaminant; and

encapsulating the critical portion such that the at least one circuit element remains un-encapsulated and such that if the electrical system is exposed to the contaminant, the contaminant is more likely to contact the at least one un-encapsulated circuit element and disable the electrical system, and is inhibited from contacting the encapsulated critical portion.

40. The method recited in claim 39, wherein the at least one circuit element is dissolvable by the contaminant, such that exposure of the at least one circuit element to the contaminant dissolves the at least one circuit element and disables the electrical system.

41. The method recited in claim 39, wherein the at least one circuit element is a fuse.

42. The method recited in claim 39, wherein the at least one circuit element senses a contaminant, and wherein the at least one circuit element is operative to disable the electrical system when the contaminant is sensed.

43. The system recited in claim 42, wherein the at least one circuit element comprises a humidity sensor.

44. In an electrical system having a plurality of current paths subject to contaminant induced short circuiting, a method for protecting selected current paths, the method comprising:

providing at least one critical current path having at least one critical component for performing a critical operation;

providing at least one non-critical current path having at least one non-critical component for enabling the critical component to perform the critical operation;

encapsulating the at least one critical current path to provide a barrier between the at least one critical current path and a contaminant such that the at least one non-critical current path remains un-encapsulated and such that a short circuit is more likely to occur in the at least one un-encapsulated non-critical current path and to disable the electrical system and is inhibited from occurring in the at least one encapsulated critical current path.

45. The system recited in claim 1, wherein the disabled controller cannot be enabled.

46. The system recited in claim 1, wherein the electrical fault comprises an open circuit condition.

47. The system recited in claim 21, wherein the load is a sensor.

48. The system recited in claim 21, wherein the load is a sensor monitor.

59. The system recited in claim 21, wherein the load is a sensor meter.

50. The system recited in claim 21, wherein the load is a medical device.

51. The system recited in claim 21, wherein the load is a processor in a personal digital assistant (PDA).

52. A selectively protected electrical system, comprising:

a power source for providing power to an electrical circuit;

a power driver circuit for controllably transferring power from the power source to the electrical circuit, the power driver circuit being encapsulated; and

a controller for enabling and disabling the power driver circuit;

wherein the power source being un-encapsulated, such that contaminants in the protected electrical system are more likely to induce an electrical fault and disable the un-encapsulated power source and are substantially inhibited from inducing an electrical fault in the encapsulated power driver circuit.

53. The system recited in claim 52, wherein the power driver circuit is encapsulated by a potting material.

54. A selectively protected electrical system, comprising:

a power source for providing power to an electrical circuit;

a power driver circuit for controllably transferring power from the power source to the electrical circuit; and

a controller for enabling and disabling the power driver circuit, the controller being encapsulated;

wherein the power source being un-encapsulated, such that contaminants in the protected electrical system are more likely to induce an electrical fault and disable the un-encapsulated power source and are substantially inhibited from inducing an electrical fault in the encapsulated controller.

55. The system recited in claim 54, wherein the controller is encapsulated by a potting material.

56. The system recited in claim 54, wherein the power driver circuit is also encapsulated.

57. The system recited in claim 56, wherein the power driver circuit and the controller are encapsulated by a potting material.

58. A selectively protected electrical system, comprising:

a critical portion of the electrical system for performing a critical operation;

a non-critical portion of the electrical system for enabling the critical portion to perform the critical operation; and

wherein the critical portion is encapsulated to provide a barrier between the critical portion and a contaminant,

wherein the non-critical portion is un-encapsulated,

wherein a contaminant in the system is more likely to induce an electrical fault in the un-encapsulated non-critical portion such that the non-critical portion disables the critical portion and the contaminant is substantially inhibited from inducing the electrical fault in the encapsulated critical portion.

59. The system recited in claim 58, wherein the critical portion is encapsulated in a potting material.

60. The system recited in claim 59, wherein the potting material is moisture resistant potting material.

61. The system recited in claim 3, wherein the at least one circuit element is a fuse.

62. The system recited in claim 1, wherein the contaminant is ionic.